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In 1976, with the aim of publishing quickly latest works of amorphous alloys achieved in Institute for Materials Research, Tohoku University, the first volume of Amorphous Materials Issue in the Science Reports of the Research Institutes Tohoku University (RITU) was edited by Professor Tsuyoshi Masumoto. Since then, seventeen volumes of the Amorphous Materials Issue were published at an approximate rate of one volume per one year. The latest seventeenth volume was edited by Professor Kenji Suzuki with the aim of dedicating to Professor Tsuyoshi Masumoto on the occasion of his retirement as a professor from the Institute. The following eighteenth volume was decided to be published on March 1997 on the basis of the recent rapid increase in the research activity of bulk amorphous alloys which has been regarded as the second generation of amorphous alloys in the world.

This volume includes 15 papers, which are classified into four categories ; (1) amorphous alloys, (2) nanocrystalline alloys, (3) liquid alloys and (4) energy balance of global CO_2 recycling. The 10 papers belonging to the category (1) describe current achievements in amorphous alloys concerning atomic configurations, thermal stability, mechanical properties, physical properties, viscous flow behavior, magnetic properties and crystallization behavior in a bulk form prepared by a copper mold casting process, corrosion resistance in a melt-spun ribbon form, short- and medium-range structures of nitrogen-induced alloy powders and mechanical alloying. The 3 papers of the category (2) demonstrate the current progress of nanocrystalline materials, which contribute to soft magnetic properties, giant magnetoresistance and mechanically induced carbonization. The two papers of the categories (3) and (4) show the usefulness of anomalous X-ray scattering method for characterizing the structure and pair potentials of liquid alloys at high temperatures and an evaluation of energy balance of global CO_2 recycling and amounts of reduction of CO_2 emission, respectively.

Thus, the papers in the present volume have been mainly occupied by the data on the development of bulk amorphous alloys which have been recognized to begin with the work of Institute for Materials Research, Tohoku University around 1990. I believe that this issue shows a new research trend in the Institute.

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Responsible Editor
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